Biology of the Eye

ANA 6050, ANA 7055, BIO 6055, and BIO 7055

(3 Credits)

Fall 2017

Tuesday and Thursday; 2:30 – 3:45 pm

State Hall, Room 106

Syllabus

Aug. 31  Introduction to the course (Dr. Pan, Ophthalmology & Anatomy)
         Structure and development of the human eye (Dr. Berkowitz, Anatomy & Ophthalmology)

Sept.  5  Cornea – Morphology, biochemistry, and physiology
         (Dr. Yu, Ophthalmology & Anatomy)

Sept.  7  Evolution of the eye (Dr. Friedrich, Biological Sciences)

Sept. 12  Lens – Anatomy, biochemistry, and molecular biology
         (Dr. McDermott, Ophthalmology)

Sept. 14  Cornea – Infectious disease (Dr. Berger, Anatomy)

Sept. 19  Lens – Cataract (Dr. McDermott, Ophthalmology)

Sept. 21  Cornea – Corneal wound healing & refractive surgery (Dr. Sosne, Ophthalmology)

Sept. 26  Exam I (3:00 – 4:20 pm)

Sept. 28  Choroid and choroidal circulation (Dr. Braun, Anatomy)

Oct.   3  Photoreceptors and phototransduction (Dr. Qiao, Henry Ford Hospital)

Oct.   5  Retinal circuitry and cellular organization (Dr. Ichinose, Anatomy & Ophthalmology)
Oct. 10  Retinal physiology and information processing (Dr. Pan)

Oct. 12  Ganglion cell photoreceptors and subconscious vision (Dr. Zhang, Oakland University)

Oct. 17  Overview of Retinal Imaging Technology (Dr. Berkowitz)

Oct. 19  Fundamentals of electroretinography: Basic and clinical considerations (Dr. Glybina, Ophthalmology)

Oct. 24  Central visual pathways and processing (Dr. Ichinose, Anatomy & Ophthalmology)

Oct. 31  Exam II (3:00 – 4:20 pm)

Nov. 2   Retinal vasculature: development, circulation and diseases (Dr. Kowluru, Ophthalmology & Anatomy)

Nov. 7   Aging processes and the onset of eye diseases (Dr. Arking, Biological Sciences)

Nov. 9   Retinal regeneration in zebrafish (Dr. Thummel, Anatomy & Ophthalmology)

Nov. 14  Non-coding RNAs in the eye and ocular diseases (Dr. Xu, Ophthalmology & Anatomy)

Nov. 16  Retinal innate immunity (Dr. Kumar, Ophthalmology & Anatomy)

Nov. 21  Retinal diseases (Dr. Abrams, Ophthalmology)

Nov. 28  Glaucoma (Dr. Goyal, Ophthalmology)

Nov. 30  Age-related macular degeneration (Dr. Lin, Ophthalmology)

Dec. 5   Diabetic retinopathy (Dr. Chapman, Ophthalmology)

Dec. 7   Visual prosthesis (Dr. Im, Henry Ford Hospital)

Dec. 12  Term paper due (for graduate credit)

Dec. 14  Exam III (2:45 – 4:45 pm)